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with each other, so that the carpels, in this view, will be opposite the sepals.—J. Torrey, *in Bulletin of the Torrey Botanical Club.*

A Monstrosity in Anemone patens.—While on a recent botanizing tour in the Rocky Mountains, I found a flower of *Anemone patens, var. Nuttalliana,* in which all the numerous pistils are thoroughly transformed into organs resembling petals, so as to give the flower the appearance of being perfectly double.

The five petal-like sepals, and also the stamens, are present in their normal state. The transformed pistils are somewhat longer than the sepals, but of the same pale purple color. The outermost, or those next the stamens, are three parted, as if to represent the leaves of the plant, while the central ones are entire, like the sepals. The root which produced this beautiful anomaly, bore three other scapes, each with a flower perfectly normal.

The specimen I have carefully preserved, as a most interesting instance of a wild flower becoming double without the aid of cultivation. But why were not the other flowers which grew from the same root also double?—Edward L. Greene, *Golden City, Colorado.*

[Why not? *Quien sabe?* By the way, full double *Thalictrum anemonoides* is found now and then in perfectly wild plants, and sometimes in *Anemone nemorosa.*—Eds.]

Ajuga reptans L.—I have detected this plant growing abundantly in a field in Saco, Maine, where it appears to be well established. It resembles *Brunella vulgaris* so closely in its habit, that I think it may have been overlooked elsewhere. It has been before (1851) found near Montreal, but not, so far as I can learn, in the United States.—G. L. Goodale.

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ZOOLOGY.

The Humming Bird.—In the month of June, 1870, we discovered a Ruby-throated humming bird building its nest near and a few feet below our chamber window. We observed carefully the building of the nest, the period of incubation and the time that the young left the nest. On the 14th of June we first saw the bird building the nest on top of a horizontal branch of a pear tree; the branch was about three-quarters of an inch in diameter under the nest. The bird built up the side farthest from the house first, and built one-half of the circle its full height; the last half of the nest she built in one day with the exception of finishing the outside with lichens. June 16th she laid the first egg and was busy at work all day covering the outside of the nest with lichens, and was one week longer finishing the outside of the nest. June 17th she sat on the nest all day; on the 18th the second egg was laid and was larger than the first egg. On the morning of the 3d of July both of the eggs were in the nest and at noon there were two young birds; this makes the period of incubation fifteen days from the time the last egg was laid. July 10th, we examined the nest, and found but one young bird; it had a little down on it, but no feathers. July 13th, I examined the young bird and found it covered with pin feathers. On the 15th it picked its feathers and had quite a long bill. The 19th, after being fed it stood up in the nest and made its wings move rapidly, as though it was trying to fly. On the 23d of July the bird left the nest, which made twenty days that it remained in the nest. We did not see a male humming bird near the nest at any time, but a neighbor's cat caught and killed two or three male birds, and it may be that it caught the mate to our bird. The old and young birds remained in the garden until late in the autumn and were quite tame; the young bird would allow me to walk within four feet of it and examine it. You will see by this that both the period of incubation and the time that the young bird remained in the nest are longer than given by Audubon and Samuels.—LABURTON JOHNSON, *Bradford, Mass.*

POSITION OF THE BRACHIOPODS.—At the meeting of the Boston Society of Natural History held March 15, Prof. Edward S. Morse referred to the communication of Mr. Wm. H. Dall, "On the Relations of the Brachiopoda" read at the preceding meeting.

Prof. Hyatt said his objections to Prof. Morse's classification of the Brachiopoda had heretofore rested wholly upon the presumed affinities of the Polyzoa and Ascidia. He had been led by the similarities of the adult animals of the two groups to partially follow Prof. Allman in his opinion that these two groups were closely related. In a paper on the Fresh Water Polyzoa (Proceedings Essex Institute, vol. iv.) he had compared them, but had at the same time shown that the differences were much greater between the Polyzoa and Ascidia than between the former and the Brachiopods. Thus, there is no muscular system in the Ascidia which can compare in any sense with that of the Polyzoa; and in transforming the Polyzoon into an Ascidian, Prof. Allman is obliged to violate this obvious difference, as well as to effect many changes which are not consistent with their organization. The nearer affinity of the Polyzoa and Brachiopoda is hardly questionable since the investigations of Koraleusky, who has shown us that the young Ascidians are apparently more like young vertebrata than they are like the young of the Polyzoa. The importance and value of the resemblances existing between the adult Polyzoon and the adult Ascidian, so far as they may be supposed to indicate any close affinity or community of origin are thus doubly denied by the differences of form and structure, both in the adults and in the larvæ.

The Ascidians are also likely to be removed by these new discoveries, not only entirely away from the Polyzoa, but to an equal or greater distance from all the rest of the Mollusca; and even if we could in the face of embryology still maintain our comparison between the two structures, we should be contrasting the Polyzoa, not with a typical Mollusk but with an animal whose own position is very uncertain. I can think of no fundamental molluscan characteristics, either in the Brachiopods or Polyzoa, which ally them with the Lamellibranchs (clams), except those which join them still more closely to the Ascidians. Therefore it seems clear, that if we separate the Ascidians from the Lamellibranchs, which they so closely resemble in their general adult characteristics, on account of their different developments, we must also, in turn, remove the Polyzoa from the Ascidians, and should logically regard the similarities of the two as analogies arising in different structures, and not as affinities derived from some common ancestor. Thus cut off from its quondam molluscan allies our Polyzoon has but one refuge; its development points concisely to a vermian ancestor, and to this source we must relegate both it and its nearest ally, the Brachiopod.

Prof. Morse called attention to the fact that Koraleusky, Hæckel, Darwin and others had pointed out the relationship apparently seen in the embryo of certain Tunicates, and the typical idea of the vertebrate embryo. Without expressing an opinion for or against this view, it was interesting to remark that many eminent naturalists had seen reason to include the Tunicates with the Vermes; and in the supposed relation, on the other hand, of the Tunicates with the Vertebrates, it was interesting to recall two prominent features of the Vermes that are likewise prominent characters of the Vertebrates, namely: hairs or setæ secreted by follicles, and genitals in pairs, with infundibuliform orifices, suspended freely in the perivisceral cavity.

A Zoologist on the Pacific Coast.—Dr. S. Kneeland gave an account at the same meeting of a trip which he made in 1870, by sea, from San Francisco to Panama, and presented a few specimens which he had collected. He described the climate, the general appearance of the coast, and incidents of the voyage, and referred to the habits of some of the sea birds and of the flying-fish. Large petrels (*Puffinus cinereus*) he said, began to appear and followed us on the second day out. On alighting in the water, which they often do, they put forward their webbed feet, checking their headway in this manner, backing water as it were with the wings spread, before settling on the surface. They came round and near the steamer in considerable numbers, but never alighted on it as the booby of the Atlantic does. On account of the great length of their wings and the shortness of their legs, they cannot rise, like the gulls, directly from the water, but are obliged to run along the surface like the smaller petrels, beating the water with their feet until sufficiently elevated to use their wings.

Flying-fish also began to appear, but neither so numerous nor so large as in the Southern Atlantic. The ventrals were expanded just like the pectorals in the act of flight, the former being much the smaller. They rose out of a perfectly smooth sea, showing that they are not mere skippers from the top of one wave to another; they could be seen to change their course, as well as to rise and fall, not unfrequently touching the longer, lower lobe of the tail to the surface, and again rising, as if they used the tail as a powerful spring. While the ventrals may act chiefly as a parachute, it seems as if the pectorals performed, by their almost imperceptible but rapid vibrations, the function of true flight. Another reason which led him to think they perform a true flight is the way in which they reënter the water. After reaching the end of their aërial course, they drop into the water with a splash instead of making a gradual and gentle descent, like the flying-squirrel, flying-dragon, and other vertebrates with membranes acting as parachutes. The drying of the flying membrane in the air would prevent the small but numerous motions necessary for true flight, and the animal, therefore, suddenly drops when the membrane becomes stiff. He could not see how the drying of the pectorals would effect their action as parachutes.

At the same time there were seen small Portuguese men-of-war (*Physalia*) no larger than an olive, and without the purple reflections of the larger ones so often met in the Atlantic. Whether these were the young, or full-grown individuals, he did not know. He saw none larger than these, and they were not numerous.

As he approached the coast off the Gulf of California the petrels disappeared and were replaced in an hour or two by white gulls, about the size of Bonaparte's gull, but either entirely white or with a very slight lavender-blue tinge on the back and wings. These had an entirely different way of alighting and rising from the water; they did not push forward their feet to arrest their course, but circled round like pigeons until their headway was stopped, then quietly settled upon the water immediately folding their wings. They also rose directly from the surface without running along as the larger winged petrels did.

MIGRATIONS OF MOTHS.—Our readers are familiar with migrations of butterflies, and now we see noticed in "Nature" the migration in "amazing numbers" of *Urania Leilus*, which mimic butterflies not only in their size, and disposition and colors of their scales, but also in this habit of swarming, which we do not remember to have seen noticed in other moths. This Urania was seen flying in swarms across the Isthmus of Panama, and also by another person near Para, Pernambuco, and Rio Janeiro. "From an early hour in the morning until nearly dark these insects passed along the shore in amazing numbers, but most numerously in the evening. It was very seldom that one was seen in the opposite direction."

The Urania is scarcely, as "Nature" suggests, "something between a skipper [Hesperia] and a hawk moth," but a true Geometer. A careful examination of the structure of the moth shows us that it is nearly allied to Chœrodes and Urapteryx. To this position Guenèe has also assigned it.

RAPID GROWTH OF THE PICKEREL (*Esox reticulatus*).—This fish, like all bad characters, makes a worse show the more he is studied. Dr. E. L. Sturtevant investigated their powers of eating, in the following manner. He put two young pickerel, about five inches long, in a trough with a great quantity of little minnows of about one inch in length; and these two pickerel ate one hundred and twenty-eight minnows the first day; one hundred and thirty-two the second; and one hundred and fifty the third! and *they increased one inch in length in forty-eight hours!* They were mere machines for the assimilation of other organisms!—*Fifth Report of Mass. Commissioners of Inland Fisheries*, 1871.

TICKS IN THE EAR.—I can tell a tale about a tick in *my* ear (see NATURALIST, May, p. 176). In Cuba I was lost in the woods. I slept one night on the ground. A day or two thereafter feeling a curious buzzing in my ear I lay down on the opposite side and filled the ear with water. It was not very long before the tick loosened its hold and was taken out. I know nothing of the species but suppose it was the common horse or cattle tick of that island.—C. WRIGHT.

THE STAR-NOSED MOLE.—In January, 1869, I noticed mole tracks and burrows in the snow in Niles, Michigan, and soon saw the star-nosed mole making similar tracks and burrows. He was apparently as lively as if it had been summer. Is it common for this animal to be abroad thus in the winter?—SANBORN TENNEY.

WHITE SPOTTED MUSKRAT.—I have a muskrat skin that has a narrow white spot upon the back, between two and three inches long; also two patches of white upon the head. There was also white about the mouth.—W. C. FISH.

GEOLOGY.

DISCOVERY OF MASTODON REMAINS AT MOTT'S CORNERS NEAR ITHACA, N. Y.—A few days ago a son of Mr. J. P. Allen, of Mott's Corners, in digging a ditch to drain a small peat bog, discovered two teeth of Mastodon. With more than ordinary good sense, he immediately stopped digging and the specimens were carried to Cornell University. A party consisting of Mr. Cornell, Pres. White, Dr. Wilder, Prof. Brown, a student and myself visited the spot and made further excavations which furnished only fragments of bones. Since then other parties have secured three more teeth and a considerable quantity of broken bones.

The locality is situated in the deep valley of Six Mile Creek, excavated in Chemung rocks. The bottom of this valley has been